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Total Laryngectomy Surgery in the United States and Spain: A Tale of Two Healthcare Systems

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Abstract

For individuals entering the field of health professions, an understanding of variation among global health systems can foster more informed viewpoints when working with multicultural populations. To investigate this relationship between the Spanish and U.S. systems, I analyzed the macro-structure of the healthcare systems in the United States and Spain to better understand plans of treatment, economic burden to patients and quality of life of patients undergoing total laryngectomy surgery in each country. A critical review of scholarly journals and studies relating to the healthcare systems of each country and total laryngectomy surgeries showed a unique picture of each system. When compared to the Spanish healthcare system, the United States' health system is associated with increased financial burden to the patient and more difficulties in coordinating appointments and procedures needed for successful treatment. This is attributed to the Spanish system's universal healthcare without copay and supportive care. Other factors such as low socioeconomic status and difficulty regarding access contribute to poorer outcomes in both healthcare systems. Engaging with the differences between systems illustrates that care can be achieved in different ways; this is a crucial lesson in increasing the knowledge base and intercultural competence of the upcoming workforce in United States healthcare.

Total Laryngectomy Surgery in the United States and Spain: A Tale of Two Healthcare Systems

The nature of a country's health system can be seen as a reflection of not only the needs of its people, but also common cultural opinions regarding competent and holistic care. The evolution of both Spain's and the United State's healthcare systems over the course of recent history reveals the impact of a multitude of factors such as cultural values, legislation, and socioeconomic diversity. The juxtaposition of the predominately privatized system of the United States and the public healthcare system of Spain also serves to differentiate these care systems. The analysis of these healthcare systems through the lens of a standardized surgery such as total laryngectomy exposes the nature of each health system from point of entry to long-term care. To gain a deeper understanding of each health system, this paper analyzes the cultural, economic and legislative elements of the US and Spanish healthcare systems through the narrow scope of treatment for individuals undergoing total laryngectomy (TL) surgery. This project reviews the current practices of each system and provides insight into the evolution of care throughout recent history. The first portion of this project details the hypothetical course of the patient population in both the United States and Spanish healthcare systems following a complete laryngectomy. This includes aspects such as procedure, costs and related therapy considering important population factors such as age, socioeconomic status and patient history. The second objective of this project is to explore and define the keystone traits of both the Spanish and US healthcare systems. This includes investigation into basic principles, balance of private and public financing, access to care, legislation, and the role of socioeconomic status in each system. Hallmarks of each system provide the opportunity for understanding the diverse pathways by which quality is achieved. Given the growing diversity of the United States, efforts to increase

awareness of global health systems serve to positively impact future health professionals and their efforts to better serve their patients through interculturally appropriate care.

Total Laryngectomy Treatment Patterns

In order to accurately analyze the characteristics of TL in both respective populations, it is first necessary to clearly define the term total laryngectomy along with basic associated characteristics. According to Remacle and Eckle (2010), the term total laryngectomy refers to, “removal of all laryngeal and associated strap muscles, from hyoid bone and epiglottis superiorly to the tracheal rings inferiorly” (Remacle & Eckle, 2010, p. 229). This procedure is commonly used as treatment for cancer of larynx or surrounding areas. TL is just one of many different surgical routes in head and neck cancers with both advantages and disadvantages. When weighing procedure options, the main drawback in choosing a total laryngectomy is the mandate of permanent tracheostomy (Remacle & Eckle, 2010). The encyclopedia of health explains that during a total laryngectomy procedure, a tracheostomy is performed in which the trachea is brought up through the skin of the front of the neck to create a hole or passageway for breathing (“Larynx”, 2018). This characteristic of total laryngectomy brings both psychological and physiological changes that impact the patient and requires significant adjustments to daily functions. Even with the mandate of tracheostomy and subsequent loss of natural voice, TL is the gold standard in treatment for advanced laryngeal cancers. The researchers Remacle and Eckle (2010) found that due to the comprehensive nature of tissue removal, TL maintains the highest rate of patient survival in spite of emerging technologies. Given the superior outcome of this procedure, the benefits many times outweigh the costs when considering successful treatment options for those diagnosed with cancer of the larynx.

The clinical decision to pursue total laryngectomy is based on many patient-specific criteria. Primarily, in a study of patients opting for TL, Fagan (2014) typifies candidates as those with cancers of the larynx that are severe, widespread and aggressive in nature. Therefore, TL is the main course of treatment in tumors of aggressive natures. Also worthy of brief mention is the small portion of individuals who undergo TL without indications of cancer. Although the majority of TL surgeries are necessitated for cancer treatment, a minority of procedures are performed due to Chondronecrosis, a condition resulting in erosion of laryngeal structures as denoted by Remacle and Eckle (2010). Chondronecrosis is most often controlled by less drastic measures with TL surgery only seen as a last resort. With most patients worldwide undergoing TL as a course of cancer treatment, it falls in line that the overall focus of this analysis considers this majority population.

With advancements in clinical research and techniques, it is important to understand that total laryngectomy is not the sole modality used in the treatment of laryngeal cancers. Emerging therapies are aimed at preserving the structures of the larynx while simultaneously maintaining successful survival rates. Currently, technologies are utilizing chemotherapy-based approaches in tandem with more minor surgical intervention as a means of successful treatment (Remacle & Eckle, 2010). Less invasive manners such as these are mostly being utilized as a primary course of treatment in low and middle grade cancer diagnoses. Attempts have been made to ascribe such treatment to more advanced head and neck cancers, but with little success. When comparing nonsurgical organ preservation modalities with total laryngectomy, Xiaoyuan, Qi Zhou, Fu, Zhou, and Zhang (2016) found that TL surgery was still the most beneficial course of treatment for individuals with severe or aggressive tumors. This study effectively highlights that although new treatment options are emerging, the effectiveness of such modalities is still considerably

limited. A second option for some patients with cancer of the head and neck is varying degrees of partial laryngectomy. Partial laryngectomy is often preferred if feasible as there is potential for restored function of the larynx and natural voice. Candidacy for such procedures vary and is based in large part on tumor size and location (Xiaoyuan et al., 2016). Although these courses of treatment are increasing, total laryngectomy remains the most comprehensive manner of treatment for laryngeal cancers.

Total Laryngectomy Patient Characteristics

In contrast to many idiopathic cancers, there is a clear consensus regarding general demographics of patients who undergo a total laryngectomy. Recent studies have made use of surgical data along with other patient records to gain a comprehensive picture of the patient population at hand. One study implemented by Gupta, Johnson and Kumar (2016) looked at data from North American and European health systems and found that, although there is variation among countries, the international incidence of laryngeal cancer remains steady (M = 2.1 per 100,00). Additionally, aggregate data in this analysis found that hazardous occupational exposure and behavior patterns such as smoking have the greatest impact on patient population (Gupta, Johnson & Kumar 2016). In a similar study, Simard, Torre and Jamal (2014) more deeply analyzed behavioral risk factors on a global scale and found tobacco exposure and consumption stood as the greatest risk factor in cancers of the head and neck. Use and abuse of alcohol was also noted as a contributing factor with the combination of tobacco and alcohol showing the greatest impact. In perhaps one of the most striking findings of their study, the researchers report that smoking is the predominant contributor (75%) to the global prevalence of head and neck cancers (Simard, Torre & Jamal, 2014). Both the US and Spain each have a long history of tobacco use and smoking, with this history playing an important role in the modern day

population. In particular, Simard, Torre and Jamal (2014) report a surge in popularity in the use of recreational tobacco in the United States in the early 1960s, while the European nations studied lacked these distinctive peaks in recreational use. Even though U.S. tobacco consumption eventually decreased in popularity and overall prevalence, smoking still remains one of the strongest contributing factors to laryngeal cancer and subsequent treatment through TL. Additionally, the synergistic abuse of both tobacco and alcohol was found to be highest in males which contributed to the highest rates of head and neck cancer among the male population (Simard, Torre, & Jamal, 2014). Connections between economic standing and incidence rates were also found showing that higher rates of behavioral patterns such as smoking are highest amongst individuals of low socioeconomic status (Simard, Torre & Jamal, 2014).

Age also stands as a major influencing factor in the demographic data of those undergoing total laryngectomy. In the United States, the mean age of laryngeal cancer diagnosis (M=62) has remained steady according to Gupta, Sonis, Schneider, and Villa (2018). The research of Tamarit et al. (2007) shows a nearly identical trend regarding those diagnosed with laryngeal cancer in Spain (M= 61). With the elevated age of this diagnosis, the prevalence of comorbidities and existing complications are key factors.

Overall, the use of tobacco and alcohol, age, and factors related to tobacco use such as low socioeconomic standing and male sex were the characteristics associated with increased rate of head and neck cancer. Although variance occurs between countries, the fairly defined patient population characteristics allow for utilization of data to create standardized and effective pathways for facilitating successful treatment outcomes.

Surgical Pathway for TL Patients: Cost, Complications, and Outcomes

Although total laryngectomy surgery has undergone many changes since its first implementation, the greatest impact in recent history has been largely attributed to the development of a total laryngectomy clinical pathway. Defined in general terms by Hanna and researchers (1999), a clinical pathway outlines the core steps of care needed for successful treatment for specific procedures. Clinical pathways first began surfacing in an attempt to decrease costs while maintaining patient quality of care through organization and strategic utilization of resources. Clinical pathways are developed independently by hospitals and health systems and are comprised of a multidisciplinary team with expertise within the clinical subject (Hanna et al., 1999). Because clinical pathways are developed by individual hospitals, variance among pathways are present but minimal as framework is grounded in current clinical practice standards.

With respect to creation of a clinical pathway for total laryngectomy, the study produced by Hanna et al. (1999) found that pathway creation involved many different medical disciplines (M= 13) helping with various aspects of TL diagnosis, treatment and recovery. Furthermore, development of comprehensive pathways created a plan of action starting from preoperative workup and carrying through to post-discharge care (Hanna et al., 1999). With the application of a clinical pathway to TL surgery, many hospitals began to see the beneficial outcomes both in terms of patient care and cost efficiency. The comparative study of Hanna et al. (1999) found that implementing a clinical pathway for TL was mutually beneficial for both the care system and patients. Their study found that, on average, those who underwent total laryngectomy after establishment of the clinical pathway experienced shorter hospital stays and spent less time in critical care units after surgery (Hanna et al., 1999). Furthermore, cost analysis found that there was a significant reduction in costs (14.1%) after implementing a care pathway for this

procedure (Hanna et al., 1999). Although the advantages of decreased length of stay and cost reduction are beneficial in themselves, the same study also found that, due to the interdisciplinary coordination established with a TL surgical pathway, patients reported higher quality care (Hanna et al, 1999). Thus, despite the fact that disease pathology and course of treatment are unique to each patient, the development of a clinical pathway for total laryngectomy surgery has served to benefit both clinical outcomes and overall quality of care worldwide.

Cost. There is broad variability in the financial intricacies of various global health systems. Perhaps one of the broadest measures of comparison is a country's measure of health care expenditure per capita. According to Garcia et al.'s (2010) health systems review, the healthcare spending per capita for the United States (M=\$7,290) was nearly triple that of the per capita expenditure in Spain (M= \$2671). Following this trend are the additional measures of direct costs (such as cost of surgery or hospital stay), and indirect cost (which are more abstract and client dependent, such as cost of loss of work and expenditures related to lifestyle changes). With the intent of creating an analysis of like expenditures, one study by Wissinger, Griesbsch, Lungershausen, Foster and Pashos (2014) closely examined direct costs associated with various head and neck cancers. When focusing on costs associated with laryngeal cancer and treatment, the team noted that the collaborative efforts of multiple disciplines and invasive nature of treatment are the main cost drivers to this clinical pathway. When examining only the direct cost associated with the treatment of laryngeal cancer, they compared data of the United States alongside that of a database encompassing multiple European nations. Comparing costs of laryngeal cancer treatment side by side, the United States showed a significantly higher mean cost (M= \$109,000) when compared with southern Europe (M= 50,000€) in 2008 (Wissinger et

al, 2014). It is worth noting that these measurements encompass the treatment pathway of cancer of the larynx, which could include chemotherapy and radiation. Cost of TL as a clinical procedure alone is under-researched on a global scale due in part to the varying degrees of neck reconstruction warranted by each individual case. Nonetheless, the striking difference between Europe and the US warrants further investigation into the trends of each system that constitute such great variance.

Service delivery. Given the complexity and emergence of non-surgical treatment methods, clinical setting of TL surgery has demonstrated a notable shift. The investigative team of Gourin et al. (2019) sought to investigate and quantify these changes through a wide pool analysis of hospitals in the United States. Investigations into trends in hospital utilization from 2001-2011 ultimately uncovered an increase in procedures completed in high- volume facilities located in centralized areas (Gourin et al., 2019). Hospitals deemed high-volume performed a significant amount of procedures (M=18) yearly with some categorized as teaching hospitals (Gourin et al., 2019). Interestingly, facilities that were dually high-volume and teaching hospital reaped cost savings and upheld better patient outcomes when compared to hospitals with lesser occurrence of TL surgery (Gourin et al., 2019). In a similar manner, the Spanish team of Orlandi, Alfeieri, Simon, Trama and Licitra (2018) surveyed the occurrence of head and neck cancer in Spain and found centralization of care within Spain's System. A meta-analysis of head and neck surgery procedures uncovered that within the entire Navarre region of Spain nearly all (85%) of head and neck cancers were treated at just two hospitals (Orlandi et al., 2018). Although centralization of care has its drawbacks in patient accessibility and access, Orlandi et al. (2018) stressed that the centralization is a natural solution to the challenges of costs and complications of intensive clinical pathways. The dependency on a multidisciplinary team's

collective resource use is substantial, with the most promising of solutions being an established team and resource pool dedicated to the patient population. In total, the trend towards centralization and high volume facilities in regards to TL surgery is accompanied by greater outcomes for both hospital resource utilization and surgical outcomes of patients.

Complications. Although the creation of a clinical pathway for TL has increased favorable outcomes for those with cancers of the larynx, complications and comorbidities are obstacles still prevalent among surgery patients. As noted in the study undertaken by Goepfert et al. (2017), the underlying cause of these complications can be dually attributed to common surgical complications and unique demographics of the TL patient population. Among a retrospective cohort of patients in a high-volume US hospital, wound complications, pharyngocutaneous fistulas, and hematoma were the top three indicated issues requiring follow up care (Goepfert et al., 2017). Hematoma is a common risk factor to any major surgical procedure while both wound complications and pharyngocutaneous fistula both strongly tie into the demographics of the patient population.

Trends among patients also linked an increase in complications with those who had multiple or intensive comorbidities or diseases that function to further complicate treatment (Goepfert et al., 2017). Patients undergoing TL with a history of smoking, prior treatment with radiotherapy or both are especially prone to wound complications (Goepfert et al., 2017). Pharyngocutaneous fistula (PCF) was found to have similar risk factors, with data regarding PCF additionally being corroborated by the Spanish team of Paydarfar and Birkmeyer (2006) in their pooled global analysis of complications in head and neck surgeries. The team commented on the role of medical comorbidities and tobacco use as marked implications for higher risk of PCF (Parfardar & Birkmeyer, 2016). The presence of both common surgical risks and population-

specific implications demonstrates the importance of well-defined and comprehensive care for those undergoing TL. Adherence to these standards of care works to decrease the presence of complication for future patients and to ensure proper rehabilitation of those currently faced with complications of surgery and recovery.

With the intensive nature of surgery and predisposition of the majority population to medical complications, it is surprising to find fairly low five-year mortality rates for both countries of interest. Gupta, Johnson and Kumar's (2016) Meta-analysis detailed a five-year mortality rate for North America (M=1.1) and only slightly higher mortality rate (M=1.2) for southern Europe with authors attributing survival outcomes to developments in surgical and non-surgical treatment options in the modern day. A study carried out by Manikantan et al. (2009) elaborated further upon the decreasing mortality rates citing increased adherence to plans of follow-up and monitoring. When analyzing a patient population of those who had undergone TL, individuals who had been diagnosed with stage three or four tumors and additionally adhered to hospital implemented protocol had the best odds of survival and recurrence detection (Manikantan et al., 2009).

Rehabilitation. It should be noted that care following TL encompasses both of preventive and rehabilitative factors. When examining the outcomes of elderly TL patients, Starmer et al. (2015) reported TL as one of the longest recovery times with patients often needing rehabilitative services for both swallowing and restoration of communication abilities in the absence of natural speech. Findings indicated that the intervention of speech-language pathology rehabilitation served not only to improve utilization of head and neck muscles, but lowered risk of dysphagia related illness such as pneumonia (Starmer et al., 2015). Yet another benefit of Speech-Language Pathology intervention was reported on by the research team of

Eadie and Doyle (2005) in their analysis of males utilizing tracheoesophageal speech (TE) as their main form of communication. Investigation into this subpopulation found that users of TE speech reported high overall quality of daily life and interaction, both among familiar and unfamiliar listeners (Eadie & Doyle, 2005). Even with the positive outcomes seen, the researchers made it clear that different manners of communication following TL are highly patient dependent and success is not guaranteed (Eadie & Doyle, 2005). In the end, the successful restoration of communication following TL depends on the combined coordination of not only the SLP clinician and patient, but access to one's healthcare system.

In total, the procedure of total laryngectomy surgery is well established with the basic elements of this procedure present in both the U.S. and Spanish systems of care. The differences between the two nations emerge with inclusion of elements such as cost and patient demographics. Nonetheless, the US and Spain exhibit similar results in overall health and survival of patients. The similarities in overall health outcomes is noteworthy given the existing variation in both framework and implementation of medical practices. In light of this, a deeper analysis into the U.S. and Spanish health systems seeks to uncover the characteristics of each system that contribute to quality care and outcomes.

Financing the Healthcare Systems in Spain and the United States

When analyzing the components of different global health systems, the juxtaposition between the United States and Spain provides valuable insight into how cultural values shape the core pillars of each given system. The modern healthcare system of the United States is a mix of private and public coverage with the majority of power in the hands of private providers. However, the US still retains an active platform of public coverage options as a route of support for specialized populations including the elderly and the socioeconomically disadvantaged.

Springer et al. (2013) describe the systems of care within the United States as interwoven, with citizens often utilizing aspects of both private and public coverage. Gruber et al. (2017) found the core values of capitalism and availability of support are the deep-seated values that have yielded the unique system of mixed coverage. The health system of Spain similarly provides access to healthcare through both private and public domains. However, there is far less mixing of private and public care with only a small minority holding private care plans (13%) (Garcia et al., 2010).

The main line of reasoning behind this unbalanced distribution is rooted in the core structure of the Spanish system. Since the amendment of 1978 and el Ley General, all Spanish citizens and workers are endowed with comprehensive healthcare that is free at point of care (Garcia et al., 2010). The establishment of this taxation funded system is a direct reflection of the populous viewpoint of health as a right rather than a privilege (Garcia et al., 2010). This consortium of thought was only established toward the end of the twentieth century, before which elective healthcare packages ambulated in restrictions, mandates, and costs. Looking at both systems over the course of time, these core values caused dynamic action within each country, with the evolution of each system showing both progress and detriment. Diversity of coverage and abundance of coverage options within the U.S. system allows for higher levels of efficiency with the opportunity to provide appropriate coverage on an individualized basis (Gruber et al., 2017). However, the large number of care systems overtime have overburdened the U.S. system financially. Spain also holds the idea of individualized medicine in high esteem, but facilitates this ideal under the broader framework of Autonomous Communities (Garcia et al., 2010). Autonomous Communities (AC) function much like U.S. states but exhibit the majority of governing power at the regional level with little involvement from national

governing bodies (Garcia et al., 2010). By placing the majority power under the governance of AC's, health services and resources can be specialized to the populous at the regional level. Given a closer look at the underlying tenets of both systems, healthcare in the United States and Spain evidence key characteristics that serve as a window into the underlying values of each given country.

When comparing financing of the healthcare systems of Spain and the United States, it is crucial to note that both systems offer healthcare sourced through both private and public avenues. However, because Spain demonstrates a public healthcare system endowed to all citizens and workers, the two healthcare systems display differences in the balance of funding. Within the United States' system, financing is broken down into federal, private and local sources. According to Springer et al. (2013), private insurance is the leading source of financing with just over the majority (53%). Federal financing, which includes Medicare and Medicaid funding, makes up the next largest share (35%) while local sources comprise a minority of financing sources (12%) (Springer et al., 2013). Although a gross breakdown of financing is beneficial in understanding basic components, it is important to remember that the U.S. health system is one of mixed and overlapping coverage options. Therefore, a given individual may have aspects of both private, public and local insurance simultaneously depending on individual factors. The Spanish healthcare system also allows for an individual to simultaneously hold private and public insurance, but overall universal public insurance makes holding dual insurance far less common. In terms of healthcare expenditure, the majority source of funding (71%) is sourced through taxes at the federal and state level as noted by Garcia et al's 2010 review of the Spanish health system. Out-of-pocket payments make up the next largest source of financing (22.4%) with private financing maintaining a small minority (5.5%) (Garcia 2010).

Furthermore, sources of financing are not limited to monetary transactions as devolution of funding impacts companies and governing bodies that control both systems.

With respect to the U.S. healthcare system, the distribution of powers is more balanced than that of the Spanish system. U.S. private companies make up the majority of financing and therefore governing power, but only by a small margin. Furthermore, Springer et al. (2013) found that under the umbrella of privatized insurance, different manners of private coverage sources prevent the over-centralization of power. Federal coverage within the U.S. health system makes up a portion of supervisory power through federal policy and legislation at the national and state levels. Within the Spanish healthcare system, the distribution of governing and supervisory power is different mainly due to decentralization of care outlined in the Constitution of 1978. Governing power is shared between bodies at the national, AC and local level, although the vast majority of power is apportioned to the level of AC (Garcia et al., 2010). The seemingly skewed distribution of power given to the organizational level of the AC has served to customize the nature of each AC's system and the needs of that region. Nonetheless, the national tier of the Spanish healthcare system maintains a stronghold in other areas such as the specialized area of earmarked funds (Garcia et al., 2010). These funds are granted to specific ACs with the goal of dispelling healthcare inequalities across the national system as a whole and are most often seen in ACs with high prevalence of refugees and subsequent health issues common to those of refugee status. When looking at both systems the overlapping roles of private and public powers in financing and supervision reflect the desire for healthcare systems that create positive outcomes at the level of the individual while benefiting the country as a whole.

With the goal of an efficient and productive system, the healthcare systems of Spain and the United States are constantly evolving with the introduction of legislation and reforms. With

respect to the US, the implementation of the Affordable Care Act (ACA) in 2010 served as one of the most impactful legislative reforms in recent history (Springer, 2013). According to Springer (2013), the main tenets of the act is to halt the exponential rise in healthcare costs while maintaining quality of care, encouraging healthcare coverage and increasing accessibility of coverage. The universal and public system of Spain also focuses on accessibility for all citizens, and legislation over recent history shows commitment to this idea. Nombela et al. (2018) found that one of the most impactful reforms under the Spanish Constitution of 1978 was the decentralization of care to the Autonomous Communities (AC). Transferring the majority of responsibility from the national level to the regional level was a process that took considerable time and resource use with the final steps of decentralization stretching into 2001(Nombela, et al., 2018). The trend of decentralizing healthcare was showing success in many European countries at the time with the idea of increasing healthcare efficiency by catering to local or regional populations. In Spain, gradual implementation of decentralization allowed the government to first test the efficiency of the new system in select ACs before mass implementation. This method of trialing a universal system additionally helped to quell concerns about possible rises in inequalities (Nombela et al., 2018). Some individuals express that while decentralization can positively cut costs by focusing resource use, this can adversely affect those with healthcare needs that differ from the standard of the region. Given the nature of specialty care required for individuals undergoing TL, a system that lacks quality and comprehensive care would greatly hinder chances of successful treatment. In an extensive, longitudinal review of the evolution of the Spanish healthcare system, Garcia et al. (2010) found that implementation of regional systems actually benefits patients and shows no adverse inflation of health inequalities at the regional or national level. Similar efforts aimed to analyze the effects of reform in the

United States, particularly in the years following the implementation of the ACA. Nipp (2018) surveyed changes in healthcare burdens before and after the implementation of the ACA and found noteworthy differences in factors related to financial burdens. The number of participants who reported difficulty in affording medications and follow up care decreased each year after ACA implementation (Nipp, 2018). The team's findings speaks to positive changes for those undergoing TL surgery who often face intensive regimens of medication and follow up care both during and after surgery. Overall, even a glimpse of legislative intervention in the healthcare systems of both countries shows that the modern health systems are the result of gradual changes and attention to creating positive healthcare outcomes. Attention to both specific population trends and to the general needs of the larger population of each country ensures system efficiency and overall quality care.

Inequalities and Obstacles to Quality Care

Although Spain and the United States seek to provide accessible and just systems of healthcare for their citizens, each country faces challenges in achieving equality with the most pressing issues relating to healthcare and individuals of low socioeconomic status (SES). Within the context of the United States, Beitler et al. (2010) found that low socioeconomic status along with poor educational attainment are key variables that negatively affect the TL patient populations' overall quality of care. Challenges in accessing quality care are rooted in lack of adequate comprehension of medical documentation and instruction for follow-up care (Beitler et al., 2010). Citizens in Spain similarly are subject to barriers in care related to SES. Saurina et al. (2011) looked to analyze the role socioeconomic status plays within the Spanish healthcare system and found that utilization of specialty care and socioeconomic status showed a distinctive relationship. It is important to note that the structure of the Spanish system functions with

general practitioners as the first point of service, with individuals only accessing specialty care through referral (Saurina et al., 2011). Ascribing this to the context of TL surgery, a patient would first be assessed by their general practitioner before being referred out to the necessary specialists and care providers needed for TL surgery and related treatment. In this way, the Spanish system can be thought of as a system of different levels, with an individual only reaching the level of specialty care after assessment at the primary level of general practice. Even though both primary and specialty care are covered under the Spanish system, Saurina et al. (2011) reported that specialty care is underutilized by citizens with low SES when compared to their higher SES counterparts. This deficit in utilization suggests that citizens of low SES face a challenge in obtaining the theoretical second tier of care, although specific reasons for underutilization are still largely unknown.

In patients undergoing TL surgery in Spain, the normalization of smoking prevents concentration of laryngeal cancer to any specific socioeconomic group; however, the findings of Saurina et al. (2011) still hold significance. The team of Gil-Prieto, Viguera-Ester, Álvaro-Meca, San-Martín-Rodríguez, and Gil de Miguel (2012) found that Spain has a far shorter history of promoting smoking cessation, and as a result, smoking among citizens is still a cultural norm with programs to decrease smoking often under-enforced. Because of more widespread cultural acceptance, the population with a history of smoking leading to total laryngectomy is therefore more widespread. With nearly all care related to TL surgery occurring within the realm of specialty care, individuals of low SES face considerable loss in care and treatment capabilities.

Within both countries, individuals of low socioeconomic status face substantial barriers in access and attainment of quality insurance coverage. Within the U.S. healthcare system, Gupta et al. (2018) found a strong relationship between poorer outcomes and low-income individuals

subscribed to government-supported insurance plans. By statistically controlling for underlying variables including age, disease stage and comorbidities, the team of researchers was able to assess the direct relationship between outcomes and nature of coverage in head and neck cancers. When compared to patients with private insurance coverage, patients who relied on public insurance programs were hospitalized for longer and struggled to obtain proper home care services after hospitalization (Gupta et al., 2018). The study outcomes of Gupta and associates are notable due to statistical isolation of variables of interest. Statistically significant evidence showing poorer outcomes with government insurance, independent of the cancer stage of a patient, illustrates the impact of insurance status in the U.S. healthcare system.

Although variables such as insurance status would seem to be non-existent in a universal system such as that of Spain, access to private insurance and the benefits of secondary privatized insurance plans are nonetheless present. The purchase of private insurance plans comes with benefits like the capability for individuals to bypass the public system's waiting lists for non-emergency surgeries and procedures. With the guarantee of universal and sufficient care, private insurance in Spain is purely supplemental, with those investing in private plans largely among the highest socioeconomic bracket. In their study, Regidor et al. (2008) sought to investigate this further, specifically looking at the probability of subscribing to a private insurance and socioeconomic status. The results of their investigation found overall that individuals with low SES were significantly less likely (74-97%) to be private plan subscribers than those of higher socioeconomic standing (Regidor et al., 2008). Taking into perspective patients undergoing TL surgery, the biggest disparity in relation to private vs public insurance lies in the inability to bypass wait times of the common system as private insurance is too costly for those of low SES. Private insurance often allows for decreased wait times, which in terms of aggressive cancers of

the head and neck can have impactful consequences for patients. In light of the vast implications of socioeconomic status within the healthcare systems of the United States and Spain, clear barriers are still preventing those of low socioeconomic standing from achieving comprehensive and quality care. Just as the term healthcare encompasses a wide breadth of services in current global society, a holistic view of healthcare systems merits attention to both healthcare outcomes and patient reports of quality factors. In the United States, Guttman et al. (2017) report that sequencing of necessary care is often difficult for patients undergoing TL surgery, especially individuals with minimal insurance coverage. The team looked at treatment for cancer of the larynx that involved TL surgery closely followed by post-surgical radiotherapy. The ties between prompt post-surgical therapy and survival outcomes are closely related, with gaps between surgery and therapy producing poorer outcomes (Guttman et al., 2017). Perhaps most interesting was the finding of the research team linking the survival outcomes of patients undergoing TL with type of individual insurance coverage. The team found that the relationship between insurance type and treatment package time was statistically strong enough to be considered a dose response relationship, with a 4% increase in risk of mortality for every 7 day gap between treatments (Guttman et al., 2017). Although there was variance among government sponsored insurance, all government insurance plans suffered greater gaps in care when compared with privatized insurance manifesting in poorer quality outcomes as a whole.

Within the Spanish system, the universal nature of public healthcare provides citizens certain rights of care that are often not covered in the majority of global health systems, and these rights are influential in citizens accessing quality and comprehensive care. In all ACs, citizens have access to a wide variety of long-term care services such as home and residential care (Serrano, Latorre & Gatz 2014). Among the elderly and those with chronic care needs,

coverage of these services are crucial in maintaining health and quality of life. Because of the many and long lasting needs of individuals undergoing TL surgery, the guarantee of long term care services through the publicly funded system is a crucial policy. Likewise, the US is increasing accessibility to needed services through the implementation of the Affordable Care Act (ACA). One of the largest differences after the implementation of the ACA was that patients in remission from cancer faced fewer barriers in obtaining necessary medications(Nipp, 2018). Being that the overwhelming majority of TL surgeries are due to presence of squamous cell carcinoma, the team's finding speak to positive changes for both the sub-population of cancer survivors, such as those in remission after TL, as well as the larger population of those with a history of cancer in the United States. In total, though the avenues of care implementation may vary, both the healthcare systems of the United States and Spain are adamant in their pursuit of care that is holistic and beneficial to their citizens.

In conclusion, core characteristics of the Spanish and U.S. healthcare systems reveal that attributes of care vary for patients undergoing total laryngectomy in each respective country. Through the scope of total laryngectomy surgery, the differences between systems contribute overall to a deeper understanding of the various manners by which quality care is achieved. Both systems offer a variety of options for coverage of care along with different routes of financing for necessary care. Additionally, both countries struggle to adequately support individuals of low socioeconomic status, but have each worked to alleviate this inequity through legislation and reform benefitting this population. Yet each country displays differences in their clinical pathway, burden to the patient, and quality care reports. In total, analysis of the U.S. and Spanish healthcare systems contributes to an appreciation for global variations in quality care. Limited literature exists detailing the characteristics of care for a specific procedure such as total

laryngectomy between different health systems such as Spain and the United States. Therefore, this project dually engages with the specific topic of total laryngectomy and the wider theme of intercultural competence. It should be noted that although this project aims to give a rounded view of both systems, the focused nature of the project has potential to limit the scope of the work. In addition, my firsthand and established knowledge of the U.S. healthcare system without comparative experience in the Spanish system also stands as a limitation. Nonetheless, this project stands to provide a deeper understanding of the diversity among health systems that exists in the modern day.

Clinical Implications and Future Directions

Understanding of the vast diversity of global healthcare systems additionally promotes reflection upon one's own healthcare system. Oftentimes, the topic of healthcare in higher learning focuses only on the native system. Therefore, healthcare professionals are entering the workforce with little to no exposure to the topic of healthcare in various global contexts. Intentional efforts to explore the mechanism of healthcare and the functions in different countries provokes thought and reflection upon the core aspects of quality care. Furthermore, attention to the differences between global health systems illuminates the true necessity of intercultural competence in the increasingly diverse healthcare workforce. Each system comes with its own strengths and weaknesses, and reflecting upon these aspects as an emerging health professional provides valuable insight.

Analyzing how the components of quality care amongst divergent nations vary lays the framework for establishing a mindset of greater awareness for cultural diversity. This directly translates into care that is mindful of cultural differences from the first point of service. Furthermore, medical advancements are constantly evolving on both a national and global level.

This evolution is taking place within the context of various health systems. In order to fully comprehend and integrate this knowledge into clinical practice, information needs to be accompanied by adequate understanding of context. Efforts to motivate students during formal education to further understand the context not only of their own health system but of another country serves to create a more informed population of healthcare providers. A glimpse into the healthcare systems of each country reveals that satisfactory care is achieved in a multitude of ways, and integrating flexibility into one's perspective of necessary and quality care is crucial in developing a mindset of intercultural competence to serve the diverse patient population of the modern day.

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Cirugía de laringectomía total en los Estados Unidos y España: Un cuento de dos sistemas de salud

Los sistemas de salud en cada país son una reflexión de las necesidades y los valores culturales de una sociedad. En los sistemas de salud de los Estados Unidos y España se ve que los factores como los valores culturales, la legislación, y la estratificación socioeconómico han influido la evolución de ambos sistemas. A través de la yuxtaposición del sistema público de España y el sistema privado de los Estados Unidos, este proyecto hace un análisis de los elementos claves de los sistemas de salud en cada país. Además, se centra en la población de pacientes que se someten a la laringectomía total. El énfasis en una población médica ofrece una lente para ver todos los aspectos de cada sistema de salud desde el punto de entrada del paciente hasta el punto de despido y después. La primera porción del proyecto detalla la ruta del paciente que se somete a cirugía de laringectomía total y incluye características del procedimiento, costos, y terapia después de cirugía. Además explica las características más comunes de las personas que se someten a laringectomía total incluyendo la edad, el estatus socioeconómico, y la historia del paciente. Siguiendo, este proyecto explora y define los aspectos claves del sistema de salud en los Estados Unidos y España. El análisis incluye información sobre los principios básicos, la relación entre el financiamiento público y el financiamiento privado, el acceso a servicios médicos, la legislación, y el rol que juega el nivel socioeconómico del paciente.

En comparación con España, los pacientes de los Estados Unidos experimentan más cargas financieras y tienen más dificultades con la coordinación de citas y procedimientos necesarios para obtener tratamiento exitoso. Los mismos desafíos no existen en la misma medida dentro del sistema de salud español debido a los derechos y las promesas del sistema universal y gratuito. El sistema universal proporciona servicios como el cuidado prolongado y el cuidado del

hogar dentro del sistema público. La inclusión de estos servicios es clave en el mantenimiento de la salud y una alta calidad de vida. Adicionalmente, para los individuos que se someten a la laringectomía total, el cuidado comprehensivo durante y después de este procedimiento invasivo es primordial. Sin embargo, tanto el sistema de salud en los EEUU como el sistema en España enfrenten los desafíos relacionados con el estatus socioeconómico. En ambos casos los resultados de salud son peores para gente con bajo nivel socioeconómico. En los Estados Unidos, los factores como el acceso al tratamiento después de la cirugía, y el tipo de cobertura ofrecido por el seguro médico afectan las disparidades de salud para la gente de un nivel socioeconómico más bajo. En España, un sistema universal apoya en algunas maneras, pero todavía hay disparidades en la utilización del cuidado especializado y las desventajas para los que no pueden comprar el seguro médico privado. Por lo tanto, ambos sistemas tienen barreras que necesitan superar para mejorar la igualdad de servicios de salud. Se puede ver a través de este proyecto de investigación y análisis que hay diferencias y similitudes con respecto a las características claves de los sistemas de salud en España y los Estados Unidos. Además, es importante notar cómo varían las experiencias de los pacientes que se someten a la laringectomía total en relación a la secuencia de tratamiento, la carga financiera del paciente, y la perspectiva de los pacientes sobre la calidad de asistencia médica.

El análisis de los dos sistemas aumenta el conocimiento de la diversidad de asistencia médica en el mundo. También este proyecto muestra la importancia del entendimiento y la competencia intercultural para los profesionales en las carreras de salud. Un análisis de los sistemas de salud en ambos países muestra que la asistencia médica de alta calidad puede llegar de maneras diferentes. Además, estas diferencias tienen una relación inseparable con los valores culturales y la evolución de cada sistema. Un respeto por las rutas diversas del cuidado médico y

el desarrollo de la competencia intercultural son características fundamentales para la educación de los estudiantes y los profesionales en las áreas de salud.